CORRES CONTROL
OUTGOING LTR NO

SE ORDER# 4700.1

95 RF 01372

DIST	LTR	ENC
MARAL M E		
ORLINGAME A H		
OSBY W S		
RANCH D B		
ARNIVAL G J		
AVIS J G		
ERRERA D W		
RAY R E		
EIS J A		
LOVER W S		
OLAN P M		
ANNI B J		
ARMAN L K		
EALY T J		
EDAHL T		
LBIG J G		
UTCHINS N M		
CKSON D T		
ELL R E		
JESTER A W		
ARX G E		
CDONALD M M		
CKENNA F G		
ONTROSE J K		
ORGAN R V		
OTTER G L		
ZZUTO V M		
SING T L		
NDLIN N B		
CHWARTZ J K		
ETLOCK G H		
TEWART D L		
TGER S G		
OBIN P M		
ORHEIS G M		
LSON J M		
R. A. RANDALL	✓	✓
S. A. BICHER	✓	✓
J. M. GRAHAMMER	✓	✓
J. C. MAST	✓	✓
M. C. HOGG	✓	✓
T. K. HOPKINS	✓	✓
L. O'ROURKE	✓	✓
CORRES CONTROL	X	X
DMN RECORD/080	✓	✓
TRAFFIC		
ATS/T130G		
M. R. WOOD	✓	✓

CLASSIFICATION

ONI		
UNCLASSIFIED		
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER SIGNATURE

DATE

REPLY TO RFP CC NO

ACTION ITEM STATUS
PARTIAL/OPEN
CLOSED
FOR APPROVALS

ORIG & TYPIST INITIALS

49846

EG&G ROCKY FLATS

EG&G ROCKY FLATS, INC
ROCKY FLATS PLANT, P O BOX 464 GOLDEN COLORADO 80402 0464 (303) 966 7000

February 2, 1995 95-RF-01372

Kurt Muenchow
Environmental Restoration Division
DOE, RFFO

OPERABLE UNIT 5, WOMAN CREEK PRIORITY DRAINAGE FEASIBILITY STUDY MEETING MINUTES - CAB-013-95

Action Forward meeting minutes to the Environmental Protection Agency (EPA) and the Colorado Department of Public Health and Environment (CDPHE)

Enclosed for transmittal to the EPA and the CDPHE are the meeting minutes from the meeting held on January 25, 1995, to discuss the best way to pursue evaluating options for the closure of the Original Landfill (IHSS 115/196), i e , presumptive remedy approach versus a Feasibility Study

If you have any questions regarding this transmittal, please contact me at 966-9100

JCB 1

Carol A Bicher
Operable Unit No 5 Closure
Environmental Restoration Program Division

CAB cb

Orig and 1 cc - K Muenchow

Attachment
As Stated

cc
P Singh

Meeting Minutes

OU5 Feasibility Study Review Meeting
25 January 1995

Meeting Location EG&G (Interlocken, East Conference Room)

Meeting Time 2 00 PM

Meeting Attendees. Carol Bicher, EG&G
Robert Cygnarowicz, EG&G
Andrew Ellison, Metcalf & Eddy
Mary Lee Hogg, ICF Kaiser
Kent Krumvieda, RUST
Bonnie Lavelle, EPA
Ed Mast, EG&G
Kurt Muenchow, DOE
Rotha Randall, EG&G
Tim O'Rourke, EG&G
Paul Singh, DOE
Carl Spreng, CDPHE
Mark Wood, EG&G
Mark Yaskanin, RUST

The meeting began with a discussion of the purpose of the meeting which was to agree upon the best way to pursue evaluating options for closure of the Original Landfill (i e , presumptive remedy vs feasibility study) The meeting agenda (Attachment 8) was then reviewed with respect to achieving the desired goal of the meeting All attendees agreed that the agenda included all items necessary for the discussion

The attendees then discussed the alternative analysis that was conducted at the last OU5 FS review meeting and the alternative analysis that was conducted independently by CDPHE (Attachment 7) The three alternatives examined in these exercises were in-place containment (i e , the presumptive remedy), excavation and onsite disposal in a newly constructed cell, and excavation and offsite disposal at Envirocare The discussion focused on the qualitative nature of these exercises and the need for additional information from the remedial investigation and the geotechnical investigation The following two specific data requirements were discussed a hydrogeological conceptual model that provides information concerning groundwater flow in IHSS 115 and the slope stability analysis of the hillside based on the results of the boring

program The required conceptual model and geotechnical information are critical to evaluating the effectiveness and cost of in-place containment

R Cygnarowicz noted that the alternative analysis exercises that were recently conducted by the FS team and CDPHE were useful in considering alternatives to the presumptive remedy, but that the analyses are not "defensible" and therefore cannot be use to select a final alternative for implementation

Components of a defensible alternative evaluation were then discussed and included the following

- defensible evaluations must be based on the conclusions of the remedial investigation,
- the evaluation criteria should be weighted as appropriate to the evaluation at hand, and
- the evaluation criteria used must be explicitly defined

All attendees agreed that a defensible comparative analysis was needed

The flowchart presented in Attachment 2 was presented to illustrate the connection between the work currently being conducted under the presumptive remedy and the work currently being conducted under the CMS/FS (i e , all other OU5 IHSSs) R Cygnarowicz discussed the original schedule for conducting the OU5 CMS/FS that was submitted to the regulatory agencies in the Fall '94 (Attachment 3) He noted that the original schedule included selection of the type of cap for the Landfill in March '95 and that the rationale for the selection documented in the Presumptive Remedy Report

R Cygnarowicz noted that in order to prepare a defensible comparison of the presumptive remedy to excavation and on- or offsite disposal, data from the RI and geotechnical boring program are necessary as noted earlier The group then reviewed a revised schedule for conducting a "mini-FS" for the landfill (Attachment 4) The mini-FS would incorporate the results of the RI (i e , human health risk assessment, environmental risk assessment, and hydrogeological conceptual model) and the slope stability analysis Incorporating these data into the mini-FS would allow completion of a detailed analysis of alternatives (DAA) for the Landfill in November 1995 as indicated in Attachment 4

The shorter duration for completion of the DAA and CMS/FS Report for the other OU5 IHSSs was discussed (Attachment 4) R Cygnarowicz noted that this shorter duration is a result of the assumption that several OU5 IHSSs will be determined "no further action" and the need for conducting detailed analysis on a limited range of remedial alternatives for the ash pits (i e , range of alternatives resulting from the Development and Screening of Alternatives will be limited)

R Cygnarowicz noted that the much smaller time difference between completion of a DAA for the Landfill and completion of a DAA for the other OU5 IHSSs shown in Attachment 4 eliminates any benefit of conducting a separate feasibility study for the Landfill The revised schedule suggests that only one feasibility study be conducted for all OU5 IHSS, including the Landfill

R Cygnarowicz noted that there is EPA guidance for conducting a Presumptive Remedy and there is guidance for conducting an FS, but that there is no guidance for preparing the "mini-FS"

B Lavelle and C Spreng both agreed that if it made sense to conduct a mini-FS for the Landfill, that we could find a way to "legitimize" the approach

T O'Rourke suggested the use of EE/CA [Engineering Evaluation/Cost Analysis] guidance which only requires consideration of a limited number of reasonable alternatives

K Muenchow stated that if we were not going to pursue the Presumptive Remedy for the Landfill, it would be best to conduct a full FS This would allow consideration of risks posed by the Landfill and perhaps consideration of alternatives involving institutional controls

C Bicher asked CDPHE if they are not willing to support the Presumptive Remedy approach for the Original Landfill based on their qualitative analysis of alternatives (Attachment 7)

C Spreng, CDPHE, stated that at this time they could not presume that the Presumptive Remedy is the best alternative for the Landfill

C Bicher asked if CDPHE would support containment in place for IHSS 115/196 if a defensible analysis incorporating conclusions of the RI and data from the geotechnical boring identified in-place containment as the preferred alternative

C Spreng stated that CDPHE would support in-place containment if a feasibility study for the Landfill identifies in-place containment as the best choice

M Yaskanin and R Cygnarowicz presented a preliminary conceptual sketch illustrating the cross section of a butressing berm installed at the toe of the Landfill (Attachment 5) It was noted that preliminary design work suggests that an 1,800-foot long berm will be required if approximately 25% of the landfill wastes are "consolidated" to make the footprint of the Landfill smaller The wastes that would be consolidated are those currently located to the south of the South Interceptor Ditch as well as wastes comprising the eastern and western most portions of the Landfill R Cygnarowicz noted that estimates of up to 160,000 cubic yards of soil would have to be removed to create the excavation in which the berm could be constructed R Cygnarowicz also noted that worst case life cycle costs for capping the landfill were estimated This cost estimate included a liner-based cover as illustrated in Attachment 6 and an approximately 30-foot

deep grout curtain around the perimeter of the Landfill

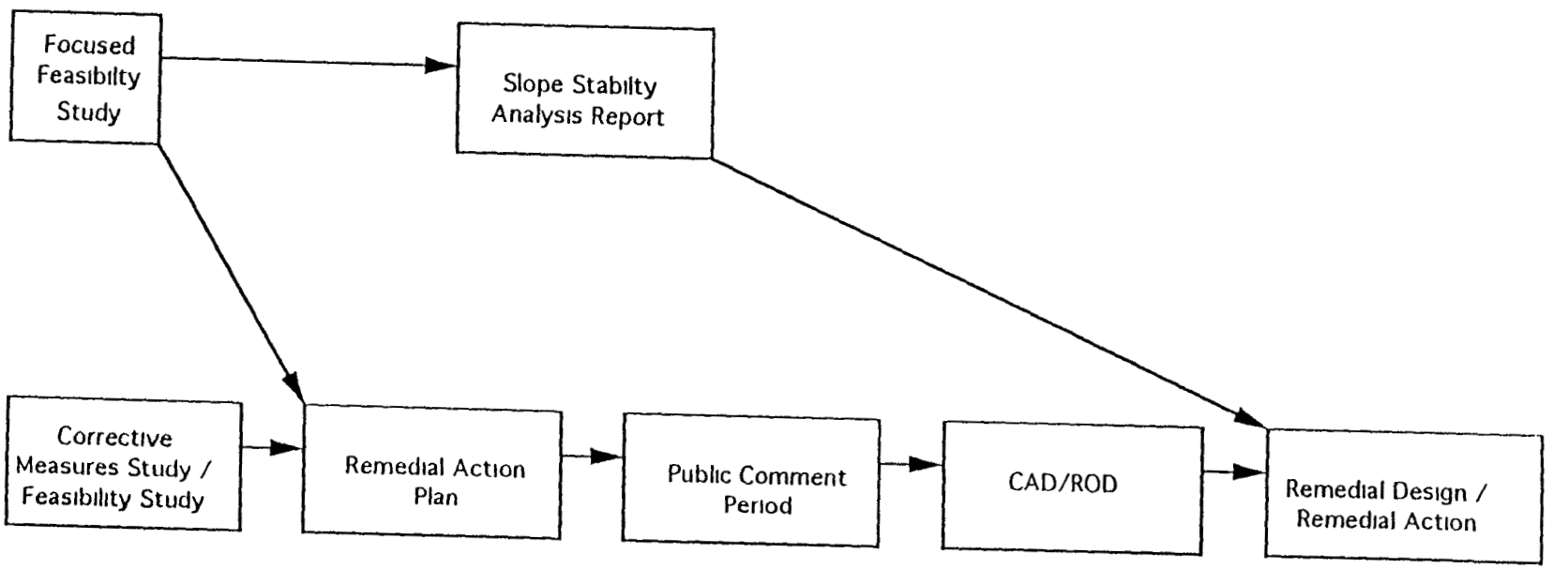
K Muenchow asked if other, less costly designs to stabilize and cover the Landfill have been examined

R Cygnarowicz noted that the single-berm is the only design that the FS team has examined with respect to life-cycle cost analysis, but that others would be examined when the results of the geotechnical boring program are available M Yaskanin emphasized that the single-berm conceptual design and the associated excavation and cost estimates are preliminary and that more accurate estimates will be made when the results of the geotechnical boring program and the RI are available

M Wood and M Yaskanin reported on the status of the OU5 geotechnical boring program

The meeting concluded with an agreement that a "full FS" analysis will be conducted for the Landfill and that with respect to written documentation, this work will be combined with the FS that is currently being prepared for the other OU5 IHSSs

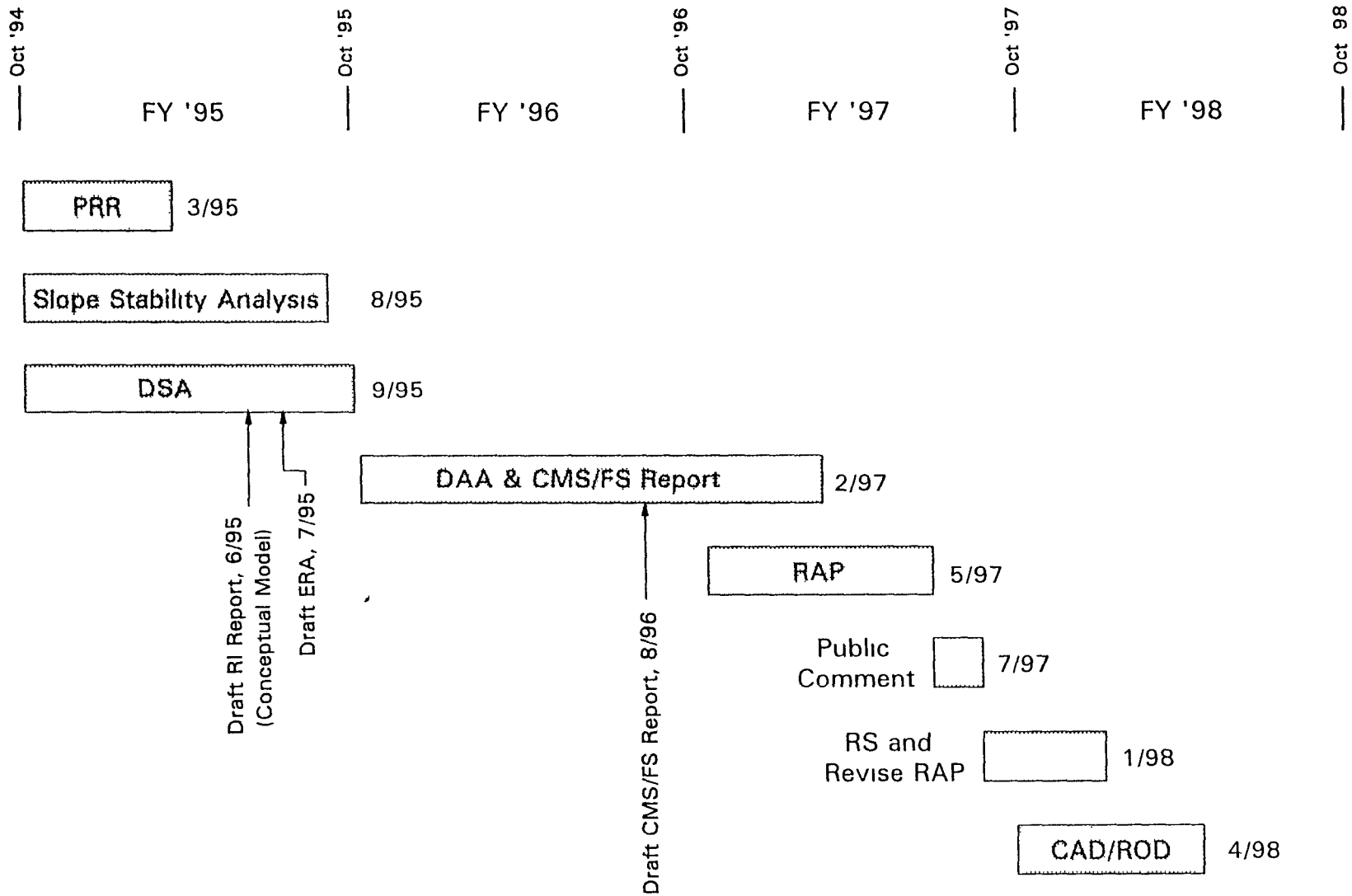
PRESUMPTIVE REMEDY APPROACH



TRADITIONAL APPROACH

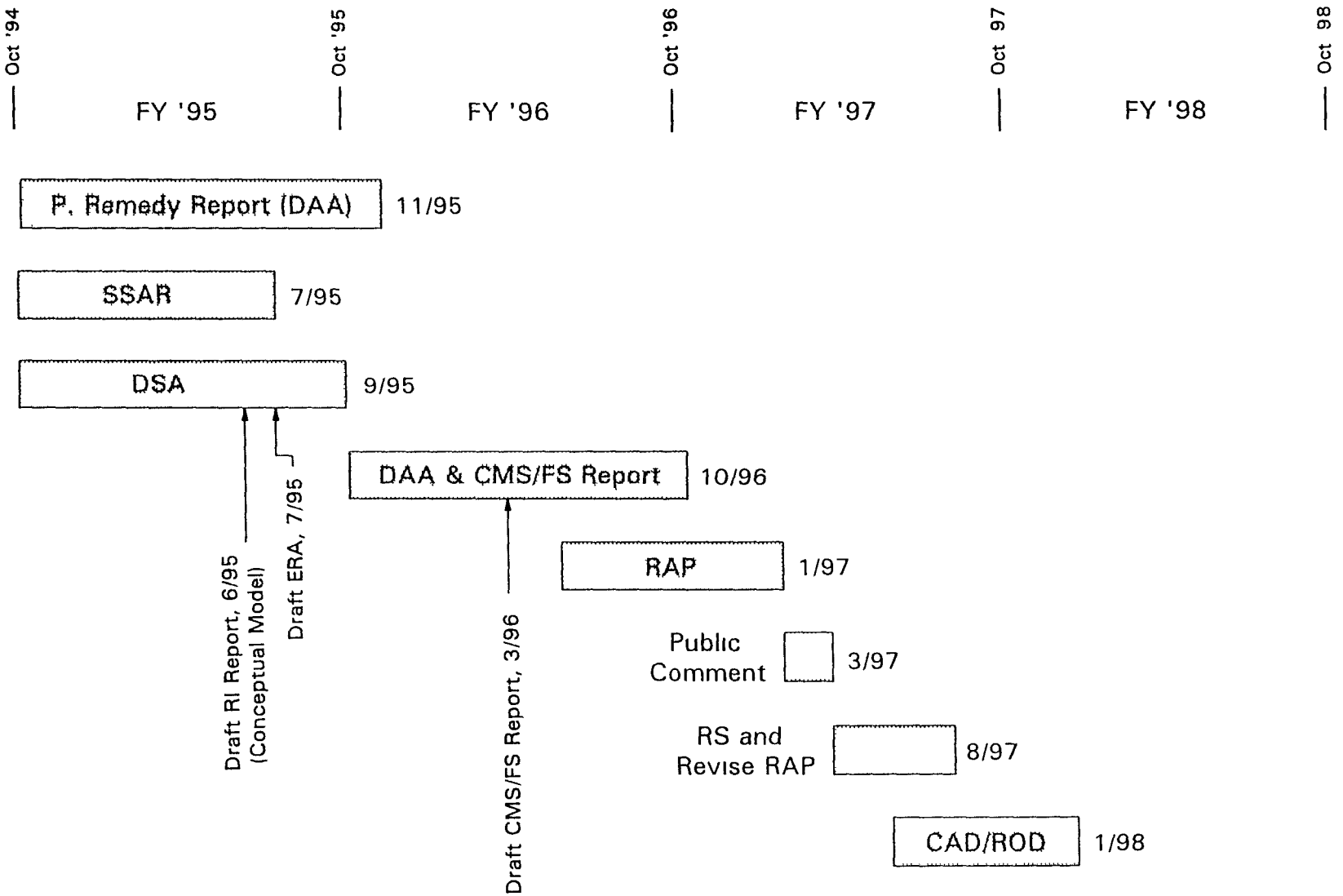
ATTACHMENT 2

Figure 1
Original Schedule
Presumptive Remedy & CMS/FS



ATTACHMENT 3

Figure 2
Revised Schedule
Landfill "Mini FS" & CMS/FS

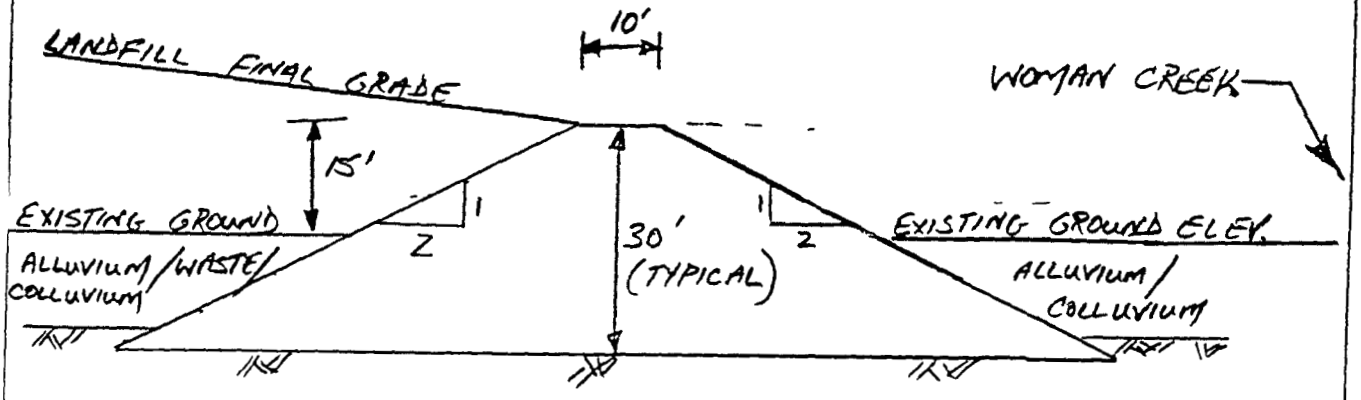


ATTACHMENT 4

ATTACHMENT 5

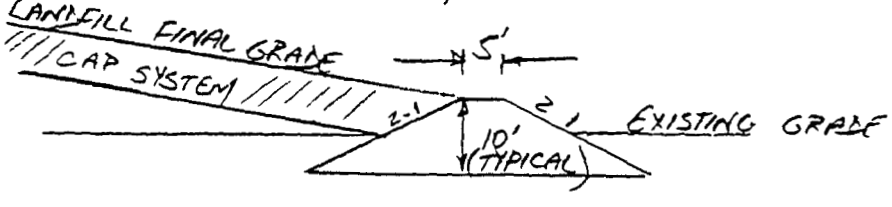
CONCEPTUAL DESIGN

STABILIZING BERM ALONG SOUTH SIDE



NOTE: STABILIZING BERM TO BE CONSTRUCTED OF STRUCTURAL FILL AND KEYED INTO CLAYSTONE BEDROCK.

ANCHOR BERM ALONG NORTH, EAST + WEST



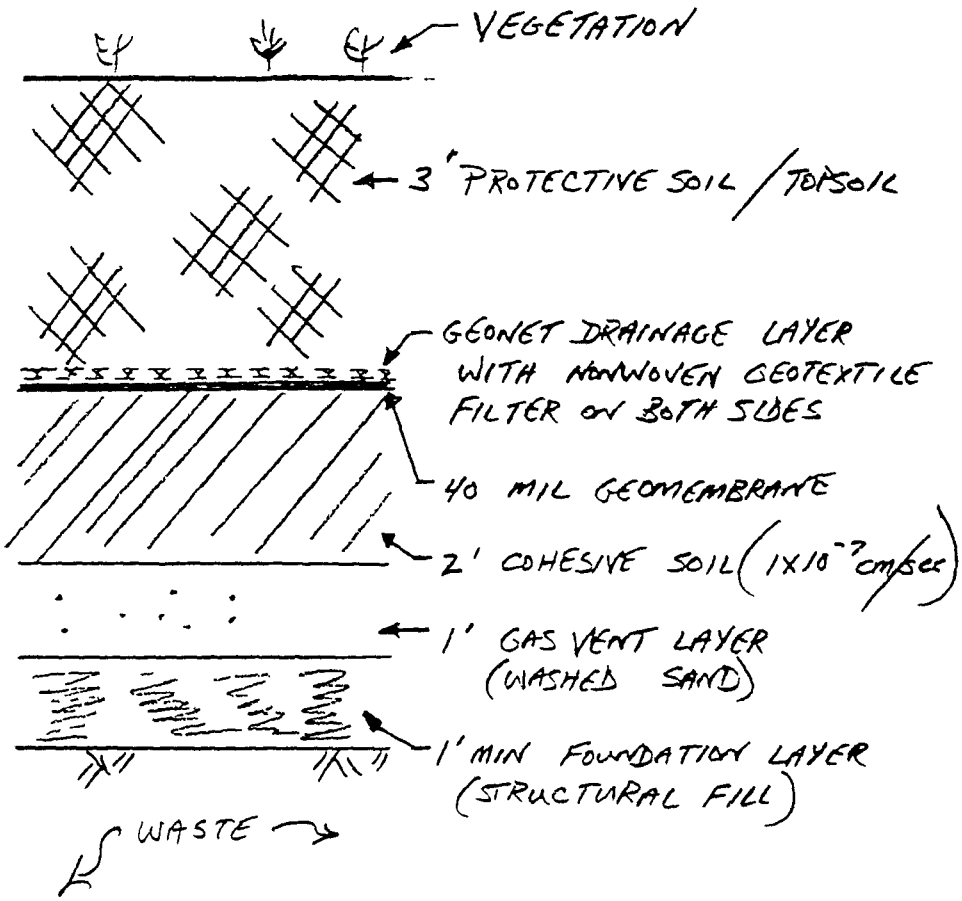
NOTE: ANCHOR BERM TO BE CONSTRUCTED OF STRUCTURAL FILL AND KEYED INTO COMPETENT SOIL

PRELIMINARY

ATTACHMENT 6

CONCEPTUAL DESIGN

CAP PROFILE



PRELIMINARY

ATTACHMENT 7

Received by: Carl Spreng
CDPHE
1/13/95

SUITABILITY RANKINGS

IHSS 115 / 196

CRITERIA:	REMEDIAL ALTERNATIVES: Dispose Onsite	Dispose Offsite	Contain In Place
Effectiveness			
- Long-term risk	4	5	3
- Cleanup risk	2	1	5
- Time till protection achieved	4	2	5
- Regulatory compliance	5	5	4
- Reliability over life of project	5	5	4
- Residual risk	5	5	4
- Reduction of toxicity, mobility, and volume	5	5	4
- OVERALL	30 (4.3)	28 (4.0)	28 (4.0)
Implementability			
- Constructability	4	4	5
- Maintenance of operation	5	5	4
- Performance goals	5	5	4
- Demonstrated performance	5	4	3
- Availability of equipment, materials, and personnel	5	5	5
- Post-remedial site controls	5	5	5
- Coordination with agencies	5	3	4
- Approvals and permits	4	2	5
- Public acceptance	3	5	3
- OVERALL	41 (4.6)	38 (4.2)	38 (4.2)
Cost Effectiveness			
- Capital cost	4	3	5
- Operation & maintenance	4	5	4
- OVERALL	8 (4.0)	8 (4.0)	9 (4.5)
TOTAL SCORE	79 (4.4)	74 (4.1)	75 (4.2)

This ranking scheme is still somewhat arbitrary and is probably indefensible, but may have some advantages

- It uses 1 thru 5 rankings to more effectively express a fuller range of suitability
- It is more quantitative in an attempt to better distinguish relative suitability among the alternatives (i e , a clear winner is determined for each criterium unless there is an obvious tie)
- There is no weighting of criteria, although weighting could be easily applied if desired
- A second category under cost effectiveness has been added

ATTACHMENT 8

AGENDA
OU5 CMS/FS Review Meeting

January 25, 1995
Large East Conference Room (Interlocken)
2 PM - 3 PM

I Introduction

Meeting Purpose
Review Agenda

II Qualitative Evaluations Conducted to Date

Acknowledgement of Uncertainties
Data Needs (Hydrogeological Model, Geotechnical Data)
Components of a Defensible Analysis

III Best Way to Proceed for Landfill

Timelines (Figures 1 and 2)
Presumptive Remedy vs "Mini FS" vs FS
Advantages and Disadvantages of Different Approaches
Agreement on Best Approach

IV Conclusion

ATTENDANCE LIST

for
OU5 CMS /FS Review Meeting

January 25,1995

	Name	Organization	Title	Phone/Fax
1	Robert Cygnarowicz	EG&G	Feasibility Study Engineer	x8601/x8663
2	Kent Krumweda	RUST	Engineer	469-6660
3	Bonnie Lavelle	EPA	Remedial Project Mgr	294-1067/7559
4	Marylee Hogg	ICF-K for EG+G	Risk Assessment	x8716/x8663
5	EC Mast	EG+G	Program Manager OU5 67 Closures	x8589/x4672
6	Kurt Muenchow	DOE	ER/RFFO	x2184
7	Paul Singh	ORNL		3490
8	Carol Bicher	EG&G	CU5 Project Manager	9100
9	Tim PORourke	EG+G ERPD	Technical Support	8577
10	Mark Yaskowiak	RUST E&I	Proj Eng	644-6660
11	Mark Jones	EG+G	Hydrogeologist	x8784/x8663
12	Andrew B Ellison	Metcalf & Eddy, Inc (M&E)	Sr Hydrogeologist	644-2202

Attachment 10, page 1 of3

Jan 25, 1995 Presumptive Remedy Mtg pg 1/5

I Purpose: To determine if we are going forward with the Pres Remedy or not.

Review of Agenda

II Qualitative

- Previous qualitative results were presented at
& CDH took back and reviewed & came back w/a ~~new~~ different qual approach.
- Acknowledge of Uncertainties

III

Figure 0 - shows how we started the FS w/a FFS for the Pres Remedy

Figure 1 - shows the Orig Sch. w/ Mar 95 as the time to select the type of cap

- shows balance of CMS/FS

Jan 25, 1995 Presumptive Remedy Mtg continued pg 2/5

2 items have come up to be more cautious

1. Inferred fault - could be a sink for GW =
- can overdesign

2 Slide Plane - if deep & would require a deep buttress = lots of soil
- see figure depicting a typical berm w/ rough calcs, ~~shows~~ indicating ~~600'~~ 160' wide, ~~1700'~~ 1800' long, 10' top 160,000 cy for the berm
- Kurt what about other options sheet piles, terracing
- Carol - this is preliminary given that results of geo tech prog are not yet in
- mark "deepest slide plane we have seen is 15'
- Mark 4 - very conservative idea (berm)
- Discussions regarding other designs - structural & GW
- Mark "WL4 - installed piezo wells (TM 15) to further monitor

Jan 23, 1995 Pres Rem Mtg continued

pg 3/5

- ~~Advantages/Disadvantages~~
- Life Cycle Analysis done as a worst case for OU5 landfill
- On site disposal site – study-suitable area cost est was prepared. will include more than just OU5

Figure 2

- Results of RI must be tied into comparison in order to do a defensible analysis of alt (DAA)
- Timeline shows how it would ~~fit~~
  There's no such thing as a mini-FS. either ~~Combined~~ guidance or follow the full blown FS

Tim Crouse: – guidance – streamline feasibility study

Ciggy – ICIC, b removal actions are CERCLA guidance

Bonnie – could find guidance to do a mini FS

Carl – agrees

Ciggy – schedule
- would take out alt that don't make sense, ie bioremediation

(CKA EE/CA ENGINEERING EVALUATION/COST ANALYSIS)

Jan 23, 95 Pres. Remedy Mtg continued

pg 4/5

Figure 2 schedule continued

landfill is on practically the same sch – separating won't save that much.

RI Results needed conceptual model, geotech info

after scoping CDH's quan analysis:

Carol – as is the state not willing to support a pres remedy

Carl S – at this time cannot presume a landfill is the best, if a streamline FS results in a landfill then the state will support it.

Onsite Disp Cell / Offsite Disposal

CDPHE – would like to see these as ~~options~~ options but recognizes that it may not be an issues.

DOE – risk assmt @ landfill

ML – will do a residential

Ciggy/ML/Ed – risk assmt will be a traditional baseline RA

Jan 25, 1995 Preumptive Remedy Continued

pg 5/5

RIOR: Assessment

Tim - Future Use Work group.

even though residential is not likely it needs to be done to evaluate the risk

Interim Area Assessment, not Future Use Working Group

TM2 - evaluate risk down at mine cleanup at that "same risk".

EPA NOT CONVINCED THIS IS CONSISTENT W/ THE RIOR ASSESSMENT DISPUTE RESOLUTION

Bonnie - RME is recommended

Kurt - ~~HO~~ what does the state want, residential? Please come back w/ an answer after you have consulted w/ agency

Conclusion - Do a full FS for the landfill too because it is the most defensible.

- TM1 in Feb 95
- TM2 in Mar 95
- Presentation of Geotech Results
- will not do a PRAP/Report (Revised)
- open space recreational will be pursued for the RA

Plus Requirement for A seperate Report to present Geo Tech Results must be further discussed DOE (Kurt) suggests inclusion in FS TM1 or TM2 or FS as Appendix

PENDING ACCEPTANCE BY CDPHE

EPA, Bonnie Lavelle Bonnie Lavelle

CDPHE, Carl Spreng Carl Spreng

DOE, Kurt Muenchow Kurt Carl